

## CLAIMS

1. A method of operating a subscriber unit to request access to a common transmission medium, said method comprising:
  - receiving an exclusive assignment to a toneset within an OFDM burst structure;
  - transmitting an OFDM burst using tones specified by said assignment while leaving other tones in said OFDM burst available for use by other subscriber units; and
  - wherein said OFDM burst comprises an access request burst.
2. The method of claim 1 further comprising:
  - converting said OFDM burst into the time domain prior to transmitting said OFDM burst.
3. The method of claim 1 wherein transmitting said OFDM burst signals termination of a silent period in a voice call.
4. The method of claim 1 wherein transmitting said OFDM burst comprises transmitting said burst in a time slot determined by a DOCSIS MAC layer protocol.
5. A method of operating a central access point to control access to a common transmission medium, said method comprising:
  - sending an exclusive assignment to a toneset within an OFDM burst structure to a selected subscriber unit;

receiving an access request OFDM burst that includes said toneset as transmitted from said selected subscriber unit; and

in response to said access request OFDM burst, assigning at least one time slot to said selected subscriber unit for use of said common transmission medium.

6. The method of claim 5 wherein said access request OFDM burst includes access request information from subscriber units other than said selected subscriber unit.

7. The method of claim 6 wherein said toneset transmitted from said selected subscriber unit signals an end to a silent period in a voice call.

8. The method of claim 5 wherein receiving said access request OFDM burst comprises receiving said access request burst within a time slot determined by a DOCSIS MAC layer protocol.

9. Apparatus for operating a subscriber unit to request access to a common transmission medium, said apparatus comprising:

a MAC layer processor that receives an exclusive assignment to a toneset within an OFDM burst structure; and

an access request burst formation block that transmits an OFDM burst using tones specified by said assignment while leaving other tones in said OFDM burst available for use by other subscriber units; and wherein

said OFDM burst comprises an access request OFDM burst.

10. The apparatus of claim 9 further comprising:  
a transform block that converts said OFDM burst into the time domain.
11. The apparatus of claim 9 wherein transmitting said OFDM burst signals  
termination of a silent period in a voice call.
12. The apparatus of claim 9 wherein said access request burst formation block  
transmits said OFDM burst in an exclusively reserved time slot determined by a DOCSIS  
MAC layer protocol.
13. Apparatus for operating a central access point to control access to a common  
transmission medium, said apparatus comprising:  
a MAC layer processor that sends an exclusive assignment to a toneset within an  
OFDM burst structure to a selected subscriber unit; and  
a request access processor that receives an access request OFDM burst that  
includes said toneset as transmitted from said selected subscriber unit; and  
wherein in response to said access request OFDM burst, said MAC layer  
processor assigns at least one time slot to said selected subscriber unit for use of said  
common transmission medium.
14. The apparatus of claim 13 wherein said access request OFDM burst includes  
access request information from subscriber units other than said selected subscriber unit.

15. The apparatus of claim 14 wherein said toneset transmitted from said selected subscriber unit signals an end to a silent period in a voice call.

16. The apparatus of claim 13 wherein said request access processor receives said access request OFDM burst within a time slot determined by a DOCSIS MAC layer protocol.

17. Apparatus for operating a subscriber unit to request access to a common transmission medium, said apparatus comprising:

means for receiving an exclusive assignment to a toneset within an OFDM burst structure;

means for transmitting an OFDM burst using tones specified by said assignment while leaving other tones in said OFDM burst available for use by other subscriber units; and wherein

said burst comprises an access request burst.

18. Apparatus for operating a central access point to control access to a common transmission medium, said apparatus comprising:

means for sending an exclusive assignment to a toneset within an OFDM burst structure to a selected subscriber unit;

means for receiving an access request OFDM burst that includes said toneset as transmitted from said selected subscriber unit; and

means for, in response to said access request OFDM burst, assigning at least one time slot to said selected subscriber unit for use of said common transmission medium.

19. A computer program product for operating a subscriber unit to request access to a common transmission medium, said product comprising:

code that causes reception and processing of an exclusive assignment to a toneset within a burst structure;

code that causes transmission of an OFDM burst using tones specified by said assignment while leaving other tones in said OFDM burst available for use by other subscriber units; and

a computer-readable storage medium that stores the codes; and wherein said burst comprises an access request burst.

20. A computer program product for operating a central access point to control access to a common transmission medium, said product comprising:

code that causes transmission of an exclusive assignment to a toneset within an OFDM burst structure to a selected subscriber unit;

code that causes reception of an access request OFDM burst that includes said toneset as transmitted from said selected subscriber unit;

code that causes assignment of at least one time slot to said selected subscriber unit for use of said common transmission medium; and

a computer-readable storage medium that stores the codes.